BARANNIKOV, N.M.

Methods of calculating the performance of compressors operating in mountainous conditions with supercharging. Izv.vys.ucheb.zav.; tsvet.met. 5 no.3:19-26 '62. (MIRA 15:11)

1. Krasnoyarskiy institut tsvetnykh metallov, kafedra gornoy mekhaniki i teplotekhniki.

(Compressors)

BARANNIKOV, N.M.

Economy in the pressure charging of compressors operating in high mountain areas. Izv. vys. ucheb. zav.; tsvet. met. 5 no.4: 21-27 '62. (MIRA 16:5)

1. Krasnoyarskiy institut tsvetnykh metallov, kafedra gornoy mekhaniki i teplotekhniki.

(Compressors)

BARANNIKOV, N.M.

Using templets and grids for the transfer of indicator diagrams obtained by the MAI-2 apparatus into a P - V coordinate system. Izv. vys. ucheb. zav.; tsvet. met. 6 no.4:22-25 '63. (MIRA 16:8)

1. Moskovskiy institut stali i splavov, kafedra mekhanizatsii gornykh rabot.

(Compressors--Testing) (Stroboscopy)

BARANNIKOV, N.M., inzh.

Semigraphical method of determining some parameters of pressure charging for compressors working at high altitudes. Izv. vys. ucheb. zav.; gor. zhur. 6 no.7:187-194 '63. (MIRA 16:9)

1. Moskovskiy institut stali i splavov.
(Air compressors)

BARANNIKOV, P.; NOVIKOV, N., red.

[Under the canopy of the Genius of Liberty] Pod sen'iu genilia svobody. Moskva, Izd-vo "Izvestiia," 1965. 107 p. (MIRA 18:3)

BARANNIKOV, P. V., kand. sel'skokhozyaystvennykh nauk

Main ways for increasing barley yields in the Northern Caucasus. Zemledelie 24 no.9:13-16 S '62. (MIRA 15:10)

1. Kubanskiy sel'skokhozyaystvennyy institut.

(Krasnodar Territory—Barley)

BARANNIKOV, P. V.

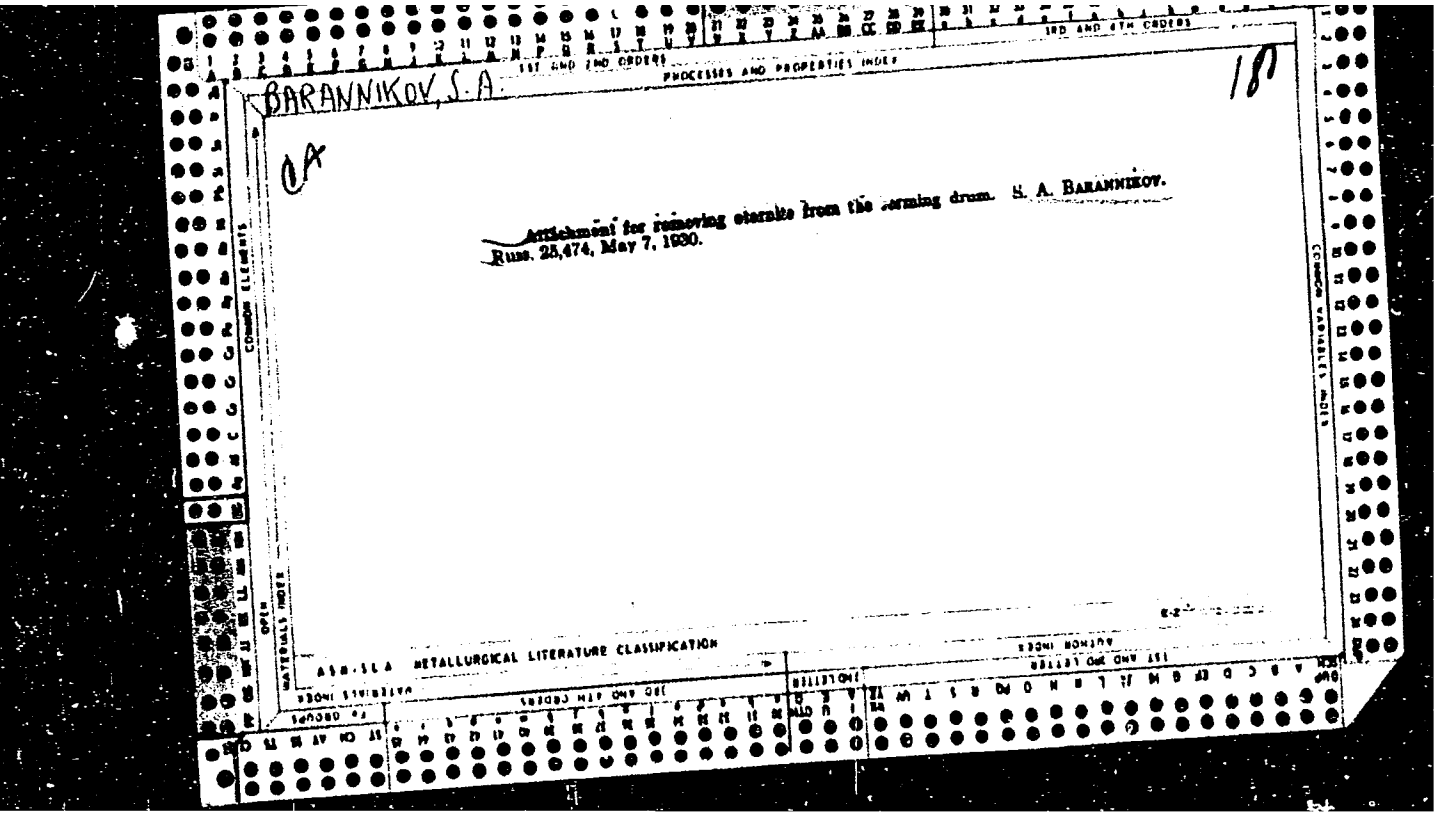
Barannikov, P. V. -- "Sowing Times and Methods of Growing Perennial Grasses in the Humid Region of Krasnodar Kray." Min Higher Education USSR. Kuban' Agricultural Inst. Krasnodar, 1956. (Disseration For the Degree of Candidate in Agricultural Sciences).

So: Knizhnaya Letopis', No. 11, 1956, pp 103-114

BARANNIKOV, P.V., kand.sel'skokhozyaystvennykh nauk

Morphological features indicating the completion of the developmental stage and the connection between stage development and cold resistance in winter grain. Agrobiologiia no. 3:420-426 My-Je '60. (MIRA 13:12)

1. Kubanskiy sel'skokhozyaystvennyy institut.
(Grain) (Plants--Frost resistance)



BARANNIKOV, S.V.

Results of investigating the operational reliability of D-357G self-powered scrapers. Trudy NPI 158:91-94 '64.

Experience in introducing the assembly-unit method for the repair of road-building machines. Ibid.:95-98

(MIRA 18:11)

BARANNIKOV, V., tekhnolog

Introducing the system of shaft line repair sizes on motorships with 3D6 engines. Rech.transp. 21 no.11:25-27 N '62. (MIRA 15:11)

1. Kiyevskiy sudostroitel'nyy i sudoremontnyy zavod.
(Merchant ships--Maintenance and repair) (Shafting)

BARANNIKOV, V.

Our work practice with state farms. Den.i kred. 18 no.11: 60-61 N'60. (MIRA 13:11)
(Krasninskiy district--Banks and banking)
(State farms--Finance)

BARANNIKOV, V.P.

Approximate evaluation of the indices of traction and speed properties and weight of designed motor vehicles with a given engine. Avt.prom. 31 no.10:30-32 O '65. (MIRA 18:10)

1. Volgogradskiy politekhnicheskiy institut.

BARANNIKOV, Yu.

Extending the life of storage batteries. Avt.transp. 32 no.11: 39 N '54. (MLRA 8:3)
(Automobiles--Electric equipment)

KUZNETSOV, F.; KAKICHEV, D.; VAL'KO, L.; BARANNIKOV, Yu.

Achievements of outstanking drivers. Avt.transp. 33 no.12:33 D '55. (MLRA 9:3)

(Automobile drivers)

BARANNIKOVA, I.A.

33085

Lokalizatsiya Gonadotropnoy Funktsii V Gipofize Sevryugi (Acipenser stellatus). Doklady Akad. Nauk. Sssr. Novaya Seriya, T. LXIX. No 1, 1949, c. 117-20-- Bibliogr: 12 Nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 45, Moskva, 1949

BARANNIKOVA, I.A.

"Localization of the Gonadotropic Function in the Hypophysis of the Sevruga Sturgeon (Acipenser Stellatus)," Dok. AN, 69, No. 1, 1949.

BARANNIKOVA, I.A,

"Concentration of the Gonadotropic Hormone in the Hypophysis of Male and Female Sturgeon (Acipenser Stellatus) at Various Stages of the Sex Cycle," Dok. AN 68, No 6, 1949

BARANNIKOVA, I.A.

USSR/Biology - Zoology

Card 1/1 Pub. 22 - 40/45

Authors : Barannikova, I. A.

Title : Completion of the process of converting into the spawning state of sturgeon males and females spawned in the fall after conclusion of the river period of the spawning migration

Periodical : Dok. AN SSSR 99/4, 641-644, Dec 1, 1954

Abstract : Biological data on the completion of the river migration period and conversion into the spawning state of sturgeon are presented. Ten USSR references (1947-1953). Illustrations.

Institution : ...

Presented by: Academician E. N. Pavlovskiy, September 2, 1954

BARANNIKOVA, I. A.

"Histology and Gonadotrophic Function of the Hypophysics of Sturgeon From Different Intraspecies Biological Groups." Cand Biol Sci, Leningrad Order of Lenin State U imeni A. A. Zhdanov, Leningrad, 1955. (KL, No 14, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

Баранникова, И.А.

BARANNIKOVA, I.A.

Biological differentiation of the Volga-Caspian sturgeon stocks (in connection with the problems of commercial sturgeon culture in the Volga Delta). Uch. zap. LGU no.228:54-71 '57. (MIRA 10:11)
(Volga River--Sturgeons) (Fish culture)

17(1)

AUTHORS: Polenov, A. L., Barannikova, I. A. SOV/20-123-6-43/50

TITLE: The Preoptic-Hypophyseal Neurosecretory System in Acipenseridae (Preoptiko-gipofizarnaya neyrosekretornaya sistema u osetrovykh)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 6, pp 1117 - 1120 (USSR)

ABSTRACT: The authors could not find any description of the neurosecretory elements of Acipenseridae in publications. The present paper deals with the morphology of the system mentioned in the title in: Sturgeon (Acipenser güldenstädti Brand.), Ac. stellatus Pallas and beluga (Ac. huso (L.) Acipenseridae are more closely related with dipnoi and amphibia than with teleostei by the existence of a single neurosecretory nucleus - the preoptic. In the diencephalon teleostei have another lateral nucleus in the tuber cinereum. However, the authors were able to find another group of cells in the caudal part of the hypothalamus of Acipenseridae; it was designated as nucleus mammillo-infundibularis. The nerve cells of this group possess all characteristics of a secretory activity (Fig 1). The cells of the preoptic nucleus are described next. Mitoses in the ependyma

Card 1/4

have never been observed in Acipenseridae. This fact suggests that there might hardly occur the same substitution of little differentiated elements of the central gray matter for the destroyed secretory neurons of the preoptic nucleus, as is assumed in the teleosts. Massive peripheral accumulations of Nissl's granules can but rarely be seen in Acipenseridae. Polynuclear neurons which are so characteristic of the teleosts (Refs 3,4,13) have never been observed in Acipenseridae. The secretory inclusions are represented by optically empty vacuoles and by so-called Homory-positive granules (HPG) (Fig 2a). In the authors' opinion the quantity and the size of the vacuoles present indirect, but essential indices of the functional state of the cell. Their quantity is inversely proportional to the HPG vacuoles. The granules are transported into the axones according to their formation. The course and the position of the neurosecretory fibers are described (Fig 1). In their whole course, they show characteristic swellings filled with HPG (Fig 2a). The most massive swellings (up to 40μ) which are placed in the tubular radicles of the pituitary are so-called Herring (Gerring) corpuscles. The facts observed suggest that these corpuscles might

be some peculiar hypertrophied neurosecretory terminations. They are formed in the course of the HPG accumulation and serve for the storage of the neurosecretion. This is discharged, as required, either into the liquor of the recessus hypophyseus (neuronal hydrencephalocrinia) or into the blood of the sinusoidal capillary (neuronal hemocrinia) (Fig 3 ye). It was proved that the PAS-negative HPG in the nerve fibers of the neurohypophysis can by no means be regarded as originating from the anterior pituitary. All above data confirm the theory of Bargman-Scharrer (Sharrer) (Refs 8,13). Thus the authors have established the so-called neurosecretory tract in Acipenseridae, as had described in other vertebrates (Refs 8,11,13,15). There are 3 figures and 15 references, 7 of which are Soviet.

The Preoptic-Hypophyseal Neurosecretory System in Acipenseridae SOV/20-123-6-43/50

ASSOCIATION: Pervyy Leningradskiy meditsinskiy institut im. I. P. Pavlova (First Leningrad Medical Institute imeni I. P. Pavlov)
Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

PRESENTED: August 18, 1958, by N. M. Anichkov, Academician

SUBMITTED: August 12, 1958

Card 4/4

BARANNIKOVA, I.A.; POLENOV, A.L.

Ecologico-histophysiological analysis of the preoptic-hypophysial neurosecretory system in sturgeons. Dokl.AN SSSR 133 no.3:719-721 Jl '60. (MIRA 13:7)

1. Laboratoriya osnov rybovodstva Glavgosrybvoda. Predstavleno akad. Ye.N.Pavlovskim.
(NERVOUS SYSTEM--FISHES) (BRAIN)

BARANNIKOVA, I.A.

Functional morphology of the hypothalamic-hypophyseal neurosecretory system in salmonid fishes at different stages of their life cycle. Dokl. AN SSSR 136 no. 3:730-733 Ja '61. (MIRA 14:2)

1. Laboratoriya osnov rybovodstva Glavgosrybvoda. Predstavleno akademikom Ye.N. Pavlovskim.
(Nervous system—Fishes) (Hypothalamus) (Pituitary body)

BARANNIKOVA, I. A.

"Ecological histophysiology of vegetative nuclei in hypothalamus and of some endocrine glands in acipencerids and salmonids in relation to their migration, behavior and reproduction"

paper to be submitted for the 3rd International Symposium on Endocrinology (Compartive), Oiso, Japan, 6-10 June 1961.

Department of Ichthyology and Hydrobiology, Biological Faculty, Leningrad State University.

BARANNIKOVA, I.A.

Effect of the Narva Hydroelectric Power Station on the fish fauna of the Narva River. Uch.zap.LGU no.311:109-125 '62.
(MIRA 15:8)

(Narva River--Fishes)

BARANNIKOVA, I.A.

Functional foundations of the adaptation of anadromous fishes during habitat changes. Vop. ekol. 5:10 '62. (MIRA 16:6)

1. Leningradskiy gosudarstvennyy universitet.
(Fishes) (Adaptation (Biology))

POLENOV, A.L., otv. red.; GERBIL'SKIY, N.L., otv. red.; ALESHIN, B.V., red.; BARANNIKOVA, I.A., red.; ZAKS, M.G., red.; YAKOVLEVA, I.V., red.

[Neurosecretory elements and their significance in the body] Neirosekretornye elementy i ikh znachenie v organizme. Moskva, Nauka, 1964. 238 p. (MIRA 17:11)

1. Vsesoyuznyy simpozium po problemam neyrosekretsii, Leningrad, 1961. 2. Leningradskiy gosudarstvennyy universitet (for Gerbil'skiy, Barannikova). 3. Institut tsitologii AN SSSR , Leningrad (for Polenov). 4. Khar'kovskiy meditsinskiy institut i Ukrainskiy institut eksperimental'noy endokrinologii, Khar'kov (for Aleshin).

BARANNIKOVA, I.A. (Leningrad, P-22, Kirovskiy prospekt 27, kv.139)

Ecological histophysiology of endocrine glands in fish.
Arkh. anat., gist. i embr. 48 no.1:3-17 Ja '65.
(MIRA 18:11)

1. Kafedra ikhtiologii i gidrobiologii (zav.- doktor biol. nauk prof. N.L. Gerbil'skiy) Leningradskogo gosudarstvennogo ordena Lenina universiteta imeni Zhdanova. Submitted March 20, 1964.

AZHORSKIY, A.A.; BARANNIKOVA, R.V.

Semiautomatic line for manufacturing collector plates. Mashinostroitel' no.8:7-8 Ag '62. (MIRA 15:8)
(Electric industries)

SVINAREV, V.I.; BARANNIKOVA, Ye.V.

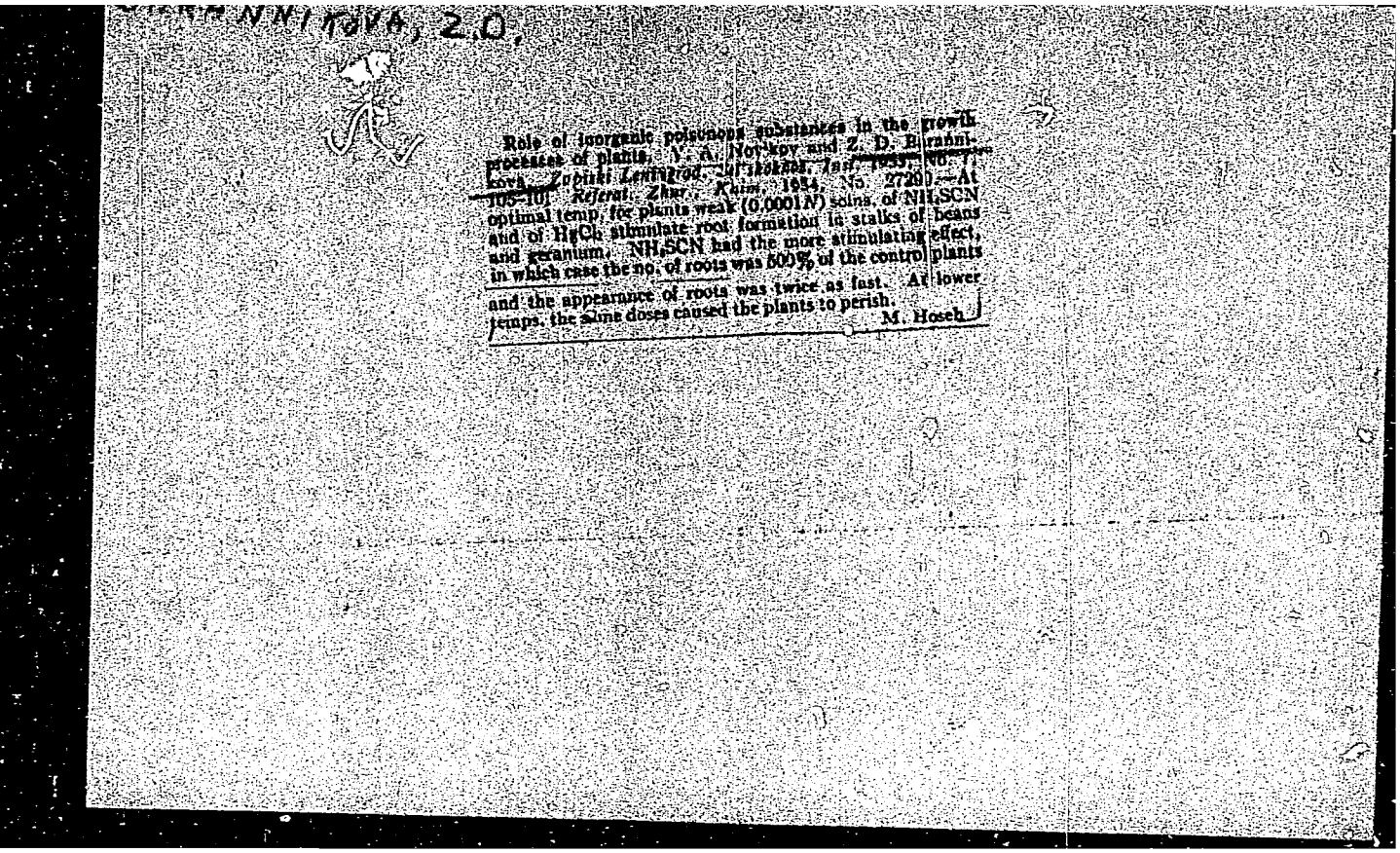
Influence of substances discharges by germinating rice seeds on the relation between rice and the millet Echinochloa crus galli (L.) R. et Sch. Fiziol.rast. 3 no.3:272-276 My-Je '56. (MLRA 9:9)

1.Astrakhanskaya kompleksnaya sel'skokhozyaystvennaya opytnaya stantsiya.
(Rice) (Millet) (Antibiotics)

[illegible] IKOV, Z. D.

"Importance of Light Intensity in the Development of [illegible]"
Cand Biol Sci, Leningrad Agricultural Inst, Leningrad, 1954.
(KZhBiol, No 1, Sep 54)

SO: Sum 432, 29 Mar 55



Role of inorganic poisonous substances in the growth processes of plants. V. A. Notkov and Z. D. Brannikova. *Zapiski Leningrad. Lesokhoz. Inst.*, 1953, No. 71, 105-10; *Referat. Zhur. Khim.*, 1954, No. 27201.—At optimal temp. for plants weak (0.0001 *M*) solns. of NH_4SCN and of $HgCl_2$ stimulate root formation in stalks of beans and geranium. NH_4SCN had the more stimulating effect, in which case the no. of roots was 500% of the control plants and the appearance of roots was twice as fast. At lower temps. the same doses caused the plants to perish.

M. Hoseh

USSR / Cultivated Plants. Grains. M-2

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24982

Author : Barannikova, Z. D.
Inst : Leningrad Agricultural Inst.
Title : The Third Stage of Development in Oats

Orig Pub: Zap. Leningr. s.-kh. in-ta, 1956, vyp. 11, 48-55

Abstract: In tests made in Leningradskaya and Saratovskaya Oblasts in 1954-1955 a study was made of the length of the third stage from the moment of the formation of anthers in 4 flowers in the top spiklet of the panicle until the formation of the first pollen tetrads in 97 oats specimens of the All-Union Plant Cultivation Institute collection. The longest 3rd stage was discovered (lasting 12 days) in the Bel-outs [?] variety (Scotland), the shortest (2 days) in the Down variety (Australia). The dependence

Card 1/2

L 04109-67 EWP(j)/EWT(m)/EWP(t)/ETI IJP(c) RM/JD/WB

ACC NR: AP6032415 (N) SOURCE CODE: UR/0021/66/000/009/1176/1179

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44
B

AUTHOR: Neznamova, T. H. -- Neznamova, T. G.; Barannyk, V. P. -- Barannik, V. P.

ORG: Sevastopol' Toolmaking Institute (Sevastopol'skyy pryladobudivel'nyy instytut)

TITLE: Azole-type mercaptoderivatives as corrosion inhibitors of cast iron and steel in water

SOURCE: AN UkrSSR. Dopovidi, no. 9, 1966, 1176-1179

TOPIC TAGS: corrosion, corrosion protection, corrosion inhibitor, ferrous metal corrosion, cast iron corrosion, steel corrosion, benzoazole, mercaptoderivative, mercaptobenzimidazole, mercaptobenzothiazole, mercaptobenzoxazole

ABSTRACT: Reactions of sodium salts, which readily dissolve in water, with mercaptoderivatives of benzoazoles were investigated. Mercaptobenzimidazole was found to be unsuitable for use as corrosion inhibitor for ferrous metals, since no complete protection of samples was achieved. Mercaptobenzothiazole is equally effective in protecting cast iron and steel. Complete protection of samples was

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L 04109-67
ACC NR: AP6032415

observed in solutions of comparatively low concentrations, i. e., 0. 2% for steel, and 0. 25% for cast iron. Mercaptobenzoxazole was found to have the greatest protective effect. Steel corrosion stops with 0. 05% of the inhibitor in the solution, and cast iron-with 0. 2%. Mercaptoderivatives are most effective within the range of PH = 8. 0—9. 0 (mercaptobenzoxazole) and 8. 5—9. 5 (mercaptobenzthiazole). The paper was presented by Yu. K. Delimars'kyy, Member of the Academy of Sciences, Ukrainian SSR. Orig. art. has: 2 figures. [Based on authors' abstract]

SUB CODE: 13/ SUBM DATE: 28Apr65/ ORIG REF: 005/ OTH REF: 015/

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Card 2/2

ACC NR: AP6036829 SOURCE CODE: UR/0021/66/000/011/1451/1454

AUTHOR: Neznamova, T. G.—Neznamova, T. G.; Barannyk, V. P.—Barannik, V. P.

ORG: Sevastopol' Instrument Building Institute (Sevastopol'skiy pryladobudivel'nyy institut)

TITLE: Certain azoles: corrosion inhibitors of cast iron and steel in water

SOURCE: AN UkrSSR. Dopovidi, no. 11, 1966, 1451-1454

TOPIC TAGS: corrosion inhibitor, steel corrosion, cast iron corrosion, benzotriazole

ABSTRACT: A study has been made of the inhibitions effect of benzoxazole, benzimidazole, benzotriazole, or benzothiazole on the corrosion of cast iron and steel in water. Benzotriazole was shown to be the most effective corrosion inhibitor. In 1% solutions of benzotriazole the corrosion rate was lowered by about 1000%. However, the effect benzotriazole is only temporary. The effectiveness of benzotriazole can be considerably improved by the addition of its sodium salt (pH 7—8). Steel or SCh cast iron can be fully protected by the addition of 0.2% or 0.5% of the buffer mixture (pH 8), respectively. This paper was presented by Yu. K. Delimars'kyy, Academician AN URSR. Orig. art. has: 3 figures

SUB CODE: 11, 07, 13/ SUBM DATE: 28Apr65/ ORIG REF: 005/ OTH REF: 015/ ATD PRESS: 5107

Card 1/1

BARANOCSKI, C.

AGRICULTURE

BARANOVSKI, C. Meter for residual-distillation liquids; an exchange of experience. p. 20.

Vol, 7, no. 5, Nov. 1958

Monthly List of East European Accessions (EEAI) LC, Vol, 8, no. 3. March 1959 Unclass.

SOV/84-58-7-15/46

AUTHOR: Baranov, A., Docent, Candidate of Geographical Sciences (Leningrad)

TITLE: In the Tropopause (V zone tropopauzy)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 7, pp 13-14 (USSR)

ABSTRACT: The author describes the character of main meteorological phenomena in the zone of the tropopause for the purpose of furnishing pilots of high-flying aircraft with information of practical value. The article deals with the characteristics of temperature, clouds, condensation trails, winds, turbulences, icing of aircraft, visibility, and electric charges within the tropopause. A diagram showing the fluctuation of the tropopause boundaries during the seasons accompanies the text.

Card 1/1

BARANOV, A.

Safety measures. Stroitel' 2 no.2:30 F '56. (MLRA 9:12)

1. Glavnyy tekhnicheskiy inspektor TSentral'nogo komiteta profsoyuza rabochikh stroitel'stva.
(Scaffolding)

Baranov A.

27-7-18/37

AUTHOR: Baranov, A., Director of Tambov School of Agricultural Mechanization

TITLE: Efficient Mechanizers Are the Pride of the School (Umelyye mekhanizatory - gordost' uchilishcha)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, 1957, # 7(146), p 22 (USSR)

ABSTRACT: The article mentions a number of graduates of the Tambov Agricultural Mechanization School # 1 who have become known for their work and who have been rewarded by the government. It points out the excellent equipment and the capable staff of the school which works to introduce new training methods. The article contains 6 pictures.

ASSOCIATION: Tambov School of Mechanization of Agriculture (Tambovskoye uchilishche mekhanizatsii sel'skogo khozyaystva)

AVAILABLE: Library of Congress

Card 1/1

BARANOV, A.

BARANOV, A. (Kiyev); USATOV, N. (Kiyev)

Characteristics of PPV wires. Pozh.delo 3 no.10:32 O '57.
(MIRA 10:11)
(Electric wire, Insulated)

BARANOV, A., kapitan 2 ranga

Improve methods for instructing ship crews. Tyl i snab.Sov.Voor.Sil 21 no.3:20-24 Mr '61. (MIRA 14:6)
(Russia—Navy—Service ships) (Naval education)

BARANOV, A.; NAZARENKO, A.

Experience of Ryazan construction workers. Na stroi.Ros. no.4:3-5 Ap '61. (MIRA 14:6)

1. Upravlyushchiy stroitel'nym trestom No.11 (for Baranov).
2. Glavnyy inzhener stroitel'nogo tresta No.11 (for Nazarenko).
(Ryazan—Textile factories)

[redacted], A., doktor geograf. nauk

Low clouds. Priroda, no. [illegible]

POLYAKOV, V. (Sverdlovsk); BARANOV, A. (Ivanovo); TSYBUL'KO, A. (Arkhangel'sk); NECHAYEV, V. (Arkhangel'sk); KANE, A., konstruktor; BIZUNOV, N.; SHASHUNOV, I., starshiy nauchnyy sotrudnik; RUDENKO, F.; KONYAKHIN, N.; KUZ'MIN, V.; POLUYEKTOV, Ye.; MOSKALENKO, N.

Technical information. Okhr.truda i sots.strakh. 5 no.12:32-37 D '62. (MIRA 16:2)

1. Zavod "Russkiy dizel'", Leningrad (for Kane). 2. Tekhnicheskiy inspektor otdela okhrany truda TSentral'nogo komiteta profesional'nogo soyuza rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok (for Bizunov). 3. Ventilyatsionnaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta (for Shashunov). 4. Tekhnicheskiy inspektor Moskovskogo oblastnogo soveta professional'nykh soyuzov (for Rudenko). 5. Komandir otdeleniya gazospasatel'nogo otryada Omskogo neftezavoda (for Konyakhin). 6 Tekhnicheskiy inspektor Stavropol'skogo krayevogo soveta professional'nykh soyuzov (for Moskalenko).

(Technological innovations)
(Safety appliances)

MATVEYEV, P., inzh.; BARANOV, A., inzh.

Improve the planning of freight transportation by direct mixed railroad-water communications. Mor.flot 23 no.2:6-8 F '63. (MIRA 16:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut morskogo flota.

(Transportation)

BARANOV, A.

In search of the right measures. Pozh. delo 9 no.4:20-21 Ap '63. (MIRA 16:4)

(Rubber industry--Fires and fire prevention)

BARANOV, A.A.

Examining the basic technological elements of grain sowing with simultaneous opening of irrigation furrows. Mekh. i elek.sel'khoz. no.4:3-13 Ap '53. (MLRA 6:5)

1. Saratovskiy institut mekhanizatsii sel'skogo khozyaystva imeni M.I. Kalinina. (Sowing) (Irrigation)

BARANOV, A.A., kandidat tekhnicheskikh nauk.

Method of designing the working surface of a double moldboard implement. Sel'khozmashina no.4:1-4 Ap '57. (MLRA 10:4)
(Plows)

BEDNOV, A.I., kandidat tekhnicheskikh nauk; BARANOV, A.A., kandidat tekhnicheskikh nauk.

Harvesting grain in separate stages in the southeast. Zemledelie 5 no.5:68-74 My '57. (MIRA 10:7)
(Volga Valley--Grain--Harvesting)

BARANOV, Aleksandr Alekseyevich; NOSOV, F.V., doktor istor.nauk, red.; SINYAKOV, Yu.I., red.; POL'SKAYA, R.G., tekhn.red.

[Labor productivity is the most important factor for the victory of communism] Proizvoditel'nost' truda - samoe vazhnoe dlia pobedy kommunizma. Pod obshchei red. F.V.Nosova. Leningrad, Lenizdat, 1960. 36 p. (MIRA 14:4)
(Labor productivity)

BARANOV, Aleksey Antonovich [Baranov, O.A.]; MUZYCHENKO, S.V., red.; LIMANOVA, M.I. [Lymanova, M.I.], tekhn.red.

[Thriving collective farm in the village of Lyubovka] Roztsvitaie kolhospna Liubivka. Kharkiv, Kharkivs'ke knyzhkove vyd-vo, 1959. 25 p. (MIRA 13:4)

1.Golova vikonkomy byubivs'koi sil's'koi Radi deputativ trudyashchikh (for Baranov).
(Kharkov Province--Rural conditions) (Collective farms)

YUNITSKIY, V.; BARANOV, A.

In the Combine of Artificial Fibers. Pozh.delo 7 no.8:8-9 Ag '61. (MIRA 14:8)

1. Glavnyy inzhener Kalininskogo kombinata iskusstvennogo volokna (for Yunitskiy) 2. Starshiy inspektor pervoy pozharnoy chasti Kalininskogo kombinata iskusstvennogo volokna (for Baranov).
(Textile factories—Fires and fire prevention)

KREYNIN, V.M.; BARANOV, A.A.; SAMSONOVA, A.P. (Moskva)

Treatment of chronic eczema by ultraviolet irradiation of the centers of lesion and galvanization of the peripheral zone. Vop. kur., fizioter. i lech. fiz. kul't. 27 no.1:65-66 '62. (MIRA 15:5)

1. Iz kozhnogo otdeleniya (nachal'nik - kand.med.nauk V.M.Kreynin) i fizioterapevticheskogo otdeleniya (zav. A.P. Samsonova), poliklinik No.12 (nachal'nik K.K.Morozov).
(ULTRAVIOLET RAYS--THERAPEUTIC USE) (ECZEMA)
(ELECTROPHORESIS) (BROMINE--THERAPEUTIC USE)

BARANOV, A.A.

Possible errors in determining free water content by means of the refractometric method (in connectio with the penetration of sugars into cells). Bot. zhur. 50 no.5:663-665 My '65.
(MIRA 18:10)

1. Vsesoyuznyy institut rastenivodstva i Frunzenskaya opytnaya stantsiya, gorod Chelkar.

BARANOV

Method for calculating heat conductivity coefficients for porous materials. Zhur.tekh.fiz. 27 no.3:532-542 Mr '57. (MLRA 10:5)

1.Leningradskiy nauchno-prakticheskiy pedagogicheskiy institut, Leningrad.

(Heat--Conduction)

[illegible]

(12,4 -7%, 10%)

AUTHORS: Baranov, A. A., Bunin, K. P., Pogrebnoy, E. N. SOV/163-58-3-44/49

TITLE: On the Mechanism of the Influence of a Previous Deformation on the Graphitization of Steel (O mekhanizme vliyaniya predvaritel'noy deformatsii na grafitizatsiyu stali)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 258-260 (USSR)

ABSTRACT: Investigations of the graphitization of steel show that the occurrence of microfissures and defects formed in the deformation of the steel sample influence the graphitization process. In the deformation of the perlite samples traces of microfissures occur after the deformation process. The deformation was carried out within 24 hours at 680°C. The degree of graphitization was traced by the alteration of the density and the microstructure. It was found that in deformed steels the graphitization process takes place more rapidly than in the initial product. The formation and widening of the graphitization inclusions, especially in the beginning of burning, begins with the occurrence of the cracks in the samples. The graphitization process is accelerated most by the occurrence of cracks in the deformed

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On the Mechanism of the Influence of a Previous Deformation on the Graphitization of Steel

samples.
When storing the steel sample in the austenite state the influence of the previous deformation on the graphitization process is comparatively small. To completely remove this influence it is necessary to store the steel sample in an austenite state for a longer period of time.
There are 3 figures and 13 references, 10 of which are Soviet.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: October 1, 1957

Card 2/2

BUNIN, K.P.; BARANOV, A.A. [Baranov, O.O.]

Disolving of graphite in austenite. Dop. AN URSR no.6:643-646 '58. (MIRA 11:9)

1. Institut chernoy metallurgii AN USSR. 2. Chlen-korrespondent AN USSR (for Bunin).
(Austenite) (Graphite)

129-58-7-3/17

AUTHORS: Bunin, K. P., Corresponding Member of the Ukr Ac.Sc. and Baranov, A.A., Engineer

TITLE: ~~Diffusion (Solution)~~ of Graphite in Austenite (O rastvorenii grafita v austenite)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 7, pp 15-18 (USSR)

ABSTRACT: At present the molecular picture of creep is described in two ways, namely, as directional self-diffusion of vacancies and as climbing of dislocations in a direction normal to slip planes (Refs. 2, 3, 6, 7). The experiments described in this paper were carried out for the purpose of establishing the influence of the state of the austenite on the speed of bridging vacancies which form during dissolution of graphite. Open hearth steel was used containing 1.10% C, 0.50% Mn, 1.08% Si, 0.016% P and 0.024% S. Cylinders of 100 mm dia 400 mm height were cast into earthen moulds and 10 x 10 x 15 mm specimens were cut from the peripheral layer of the casting where the density is highest. The obtained results, which are described, indicate that the healing of vacancies forming in the austenite during graphite

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Diffusion (Solution) of Graphite in Austenite 129-58-7-3/17

dissolution is due to self-diffusion.
There are 2 figures and 15 references, 11 of which are Soviet, 3 English, 1 Czech.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgy Institute)

Card 2/2

SOV-21-58-9-12/28

AUTHORS: Bunin, K.P., Corresponding Member of the AS UkrSSR, Paranov, A.A. and Pogrebnoy, E.N.

TITLE: Spheroidization, Coalescence and Graphitization of Cementite in Deformed Perlite (Sferoidizatsiya, koalestsentsiya i grafitizatsiya tsementita v deformirovannom perlite)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 9, pp 961 - 965 (USSR)

ABSTRACT: The processes of spheroidization, coalescence and graphitization of eutectoid cementite are possible in steels and cast iron whose structure contains perlite. These processes are accelerated after a preliminary deformation. The mechanism of this acceleration has not been sufficiently clarified. Therefore, the authors undertook to investigate the effect of deformation upon these processes. The cast open-hearth steel of the following composition: 0.94% C, 0.99% Si, 0.56% Mn, 0.014% P and 0.029% S was used for the studies. As a result of microscopic investigations of annealed deformed perlitic silicon steel, it was established that spheroidization, coalescence and graphitization of cementite are considerably accelerated in the traces of sliding and creases, in particular at the points of their intersection. This acceleration is explained by the facilitation of the motion of

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Spheroidization, Coalescence and Graphitization of Cementite in Deformed Perlite

atoms in a metallic matrix due to accumulation of dislocations and vacancies in the traces of deformation and also to arising injuries of continuity (microcracks). There are 4 sets of photos and 15 references, 11 of which are Soviet, 3 English and 1 German.

ASSOCIATION: Institut chernoy metallurgii AN UkrSSR (Institute of Ferrous Metallurgy of the AS UkrSS); Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: March 4, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Iron carbides--Metallurgy 2. Steel--Properties 3. Cast iron--Properties 4. Pearlite--Metallurgical effects

BUNIN, K.P.; GRECHNYY, Ya.V.; MALINOCHKA, Ya.N.; TARAN, Yu.N.; BEL'CHENKO, G.I.; POGREBNYY, E.N.; DANIL'CHENKO, N.M.; YATSENKO, A.I.; REPIN, A.K.; BARANOV, A.A.; SHPAK, T.M.

Is metastable austenite possible at a point higher than A_1?
Izv.vys.ucheb.zav.; chern.met. no.10:143-144 O '58.
(MIRA 11:12)

1. Dnepropetrovskiy metallurgicheskiy institut i Institut chernoy metallurgii AN USSR.
(Austenite) (Phase rule and equilibrium)

18(0) SOV/21-59-1-10/26

AUTHOR: Baranov, A.A.

TITLE: The Effects of Normalization on the Graphitization of Steel (O vliyanii normalizatsii na grafitizatsiyu stali)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, Nr 1, 1959, pp 37-41 (USSR)

ABSTRACT: The author describes the effects of the temperature and duration of austenization, and the subsequent air cooling on the graphitization of cast steel, observed during the experimental treatment of cast silicon steel (1.10%C; 0.50%Mn; 1.08%Si, 0.016%P; 0.024% S). The 10 X 10 X 10 mm cubes, cut out of the most dense sections of cylindric castings, were subjected to heating in an electric furnace at 800-1200°C, for 10, 30, 90 and 270 hours. After outdoor air cooling, the cubes were graphitized for 48 hours, at 680° C, within iron vessels covered with a mixture of graphite

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The Effects of Normalization on the Graphitization of Steel

and iron shavings. Complete graphitization set-in in 6 days. The author describes other pertinent details of the tests and comes to the conclusion, that the effects of preliminary normalization depend upon the temperature of austenization. The steel used showed best normalization effects at 1000-1100°C. The effect of normalization can be done away with by subsequent annealing. After a brief annealing, steel subjected to normalization graphitizes quickly. After a prolonged austenization, normalization shows no effect upon the susceptibility of steel to graphitization. Apparently, the quick graphitization of normalized steel is a result of a stepped-up cooling above A_{r1}. There are three micro-photos, one graph, and 8 references, 7 of which are Soviet, one Chinese.

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SOV/21-59-1-10/26

The Effects of Normalization on the Graphitization of Steel

ASSOCIATION: Dnepropetrovs'kiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

PRESENTED: October 3, 1958, by V. N. Svechnikov, Member of AS Ukr SSR.

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18(3), 18(7)

AUTHOR: Baranov, A. A.

SOV/163-59-1-41/50

TITLE: Influence of Deformation Upon the Carburization of Steel in Connection With the Occurrence of Black Shortness (Vliyaniye deformatsii na grafitizatsiyu stali v svyazi s obrazovaniyem chernogo izloma)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 214-219 (USSR)

ABSTRACT: The purpose of the paper under review was to investigate the influence of temperature, of the deformation degree and of the conditions of deformation upon the carburization of steel which in its original state did not contain any carbon and which was carburized previous to the experiments. The duration of deformation and of cooling of this steel was comparatively short. Two Siemens-Martin silicon steels (A and B) were investigated. The rate of deformation amounted to $5 \cdot 10^{3}$ mm/sec. The tempering was carried out at a temperature of 680°. For the determination of the deformation temperature the degree of upsetting was in all samples set to the same value (35%). The initial structure of the cast iron B was a lamellar perlite. The most pronounced tendency to carburize was exhibited by

samples upset in the range of 300-500°, that is to say in the region of blue shortness. An increase or a reduction of the temperature during upsetting lead to a weaker carburization. An upsetting in the austenite state had practically no influence upon the carburization. It appeared in the course of the microanalysis that if the deformation temperature is varied not only the number of graphite inclusions, but also their shape and their distribution varies. The initial structure of the steel A was a perlite-zementite structure. The curve obtained demonstrates that the most effective deformation occurs at 300-500°. With an increase of the deformation temperature the carburization in the singlephase austenite state is obstructed, (at temperatures exceeding 900°). In the critical range (750-850°) the upsetting accelerates the carburization process. The distribution and the shape of the graphite inclusions in samples which were upset at temperatures from 20-850° are identical for both types of steel tested - A and B: Oblong compact graphite in a "chain" form. The influence of the deformation degree was investigated at

Influence of Deformation Upon the Carburization of Steel in Connection With the Occurrence of Black Shortness

SOV/163-59-1-41/50

700, 800, 900 and 1,100° in the steel B and at 850° in the steel A. The samples were upset by 15, 35% and 50%. An increase of the deformation at 700° lead to an increase of the tendency toward carburization in steel B. An upsetting at 800, 900, and 1,100° exerted practically no influence. An acceleration of graphitization was found at 850° in steel upset by 35% and 50%. The influence of hot working of carburized steel upon the aftercarburization was investigated in cast samples previously hardened. It was found, that in completely carburized steel a halting time of 10 minutes at 1,000° is sufficient for a dissolution of the graphite and that the pores produced by this process do not disappear after a long-term soaking (10,000 minutes) at 1,000°. As a result of hot working at 1,000-1,100° the pores are deformed, flattened out and rolled in. The aftercarburization of samples previously carburized and deformed to different degrees proceeded differently. An interrelation between the graphite distribution and the darkening of the rupture was found to exist. This proves the fact that the inhomogeneity of black ruptures is not caused by the mechanism

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of rupture but by the non-uniformity of carburization. The information collected proved the great role played by microfissures and pores in carburization, which is in accordance with the conventional conceptions concerning the carburization process. There are 4 figures and 4 references, 3 of which are Soviet.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Institute of Metallurgy)

SUBMITTED: December 21, 1957

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510002-9"

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18.7500 2308, 1555, 1146

S/021/60/000/006/008/019
A153/A029

AUTHORS: Bunin, K.P., Corresponding Member, AS UkrSSR; Baranov, A.A.; Prytomanova, M.I.

TITLE: Growth of Graphitized Steel During Cyclic Heat Treatment

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, 1960, Nr. 6, pp. 776 - 779

TEXT: Furthering the accomplishments described in a paper by the two first authors (Ref. 1), data are cited obtained in a study intended to find out a microscopic picture of the growth of graphitized steel, conducted on a steel smelted in a Tamman furnace. The steel consisted of 1.0% C, 0.54% Si, 0.17% Mn, 0.014 - 0.01% P, and was characterized by its uniformity and by the compactness of graphite impurities (Fig. 1). The 13 x 13 x 13 mm samples were heated in a 600°C hot furnace up to 1,000°C for 30 minutes, held there at 1,000°C for 60 minutes, then cooled during 90 minutes to 600°C, then again heated up to 1,000°C during 30 minutes, whereupon the whole cycle was repeated. Microexaminations took place after 1, 2, 4, 8, 10, 14 and 24 cycles. It was found that the increase in steel volume during cyclic heat treatment depends upon the accumulation of voids as a

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A153/A029

Growth of Graphitized Steel During Cyclic Heat Treatment

result of multiple graphite solution and separation. These voids are similar to the diffusion pores appearing in systems composed of components greatly differing in the partial coefficients of diffusion. Figure 4 shows the results of these microscopic examinations. It is evident that apart from the known three mechanisms of the growth of cast iron and graphitized steel, such as oxidation decomposition of cast iron and the formation of cracks, the fourth mechanism also must be taken into account, viz., the formation of the diffusory pores, appearing due to a decomposition of graphite and accumulation of them in the course of cyclic treatment. This mechanism can be used in the manufacture of porous steel and when repairing worn-out dies made from graphitized steels. There are 3 figures, 1 graph and 2 references: 1 Soviet, 1 English.

ASSOCIATION: Instytut chornoyi matalurhiyi AN UkrSSR, Dnipropetrovs'kyy metalurhiynyy instytut (Institute of Ferrous Metallurgy of the AS UkrSSR, Dnepropetrovsk Metallurgical Institute)

SUBMITTED: February 9, 1960

Card 2/2

BUNIN, Konstantin Petrovich; BARANOV, Aleksandr Aleksandrovich; POGREBNOY, Emil' Nikiforovich; KISINA, I.V., red. izd-va; LISOVETS, A.M., tekhn. red.

[Graphitization of steel] Grafitizatsiia stali. Kiev, Izd-vo Akad. nauk USSR, 1961. 84 p. (MIRA 14:9)
(Steel—Metallography) (Annealing of metals)

S/129/61/000/001/005/013
E193/E183

AUTHOR: Baranov, A.A., Candidate of Technical Sciences

TITLE: The Effect of Plastic Deformation on Graphitization of Steel

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1961, No. 1, pp. 25-28 (+ 2 plates)

TEXT: The present paper describes the results of an investigation, conducted in an attempt to establish the cause of so-called "black fracture" in hot-worked steel. Two open-hearth steels А (A) and Б (B) were used in the experiments. Steel B, in the as-cast condition, containing 0.94% C, 0.56% Mn, 0.99% Si, 0.014% P, and 0.029% S, consisted of lamellar pearlite. The structure of steel A, containing 1.10% C, 0.5% Mn, 1.08% Si, 0.016% P, and 0.024% S, consisted of pearlite and cementite. The experimental test pieces were cut from the most sound, peripheral regions of ingots, measuring 100 x 100 x 600 mm. The test pieces (10 x 15 x 50 mm) were heated to 1100 °C, cooled in the furnace to various temperatures in the 20-1100 °C range, and then subjected to hot deformation of 35%. After the hot-working

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S/129/61/000/001/005/013
E193/E183

The Effect of Plastic Deformation on Graphitization of Steel

operation, carried out with the aid of a drop-hammer (rate of deformation = 5 x 10^3 mm/sec), the test pieces were given a graphitization anneal consisting of 96 hours at 680 °C. The degree of the resultant graphitization was determined by density measurements and by examination of the macro- and microstructure of the test pieces. Highest degree of graphitization was observed in specimens deformed plastically at temperatures between 300 and 500 °C. The temperature of plastic deformation affected not only the number, but also the shape and distribution of the graphite particles. Thus, for instance, in the case of undeformed test pieces, or those deformed at temperatures higher than 700 °C, the graphite precipitates were situated mainly at the boundaries of the pearlite colonies. In test pieces deformed at temperatures between 20 and 700 °C, graphite particles were found both at the boundaries and in the interior of the pearlite grains. The results of the next series of experiments showed that, whereas with increasing degree of plastic deformation the degree of graphitization of steel B (deformed at 700 °C) and steel A

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S/129/61/000/001/005/013
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The Effect of Plastic Deformation on Graphitization of Steel

(deformed at 850 °C) increased, this effect was not observed in material deformed at higher temperatures. In the next stage of the investigation, the effect of plastic deformation of graphitized steel on the degree of secondary graphitization was studied on both cast and quenched specimens. It was established that a 10 min treatment at 1000 °C was sufficient completely to dissolve graphite present in fully graphitized steel; however, some of the pores, formed after the dissolution of graphite, remained in these test pieces even after 170 hours at 1000 °C. The degree of the secondary graphitization was greatly affected by the degree of plastic deformation. Highest degree of graphitization was observed in undeformed specimens and in those subjected to light deformation (up to 15%). Metallographic examination of these specimens revealed that secondary graphite precipitates were formed on the surface of the pores, formed as a result of the dissolution of the primary graphite. The density of steel decreased after secondary graphitization. The secondary graphite, precipitated in cast specimens subjected

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E193/E183

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to 35% deformation, had markedly elongated shape, identical with that of the deformed pores. Specimens subjected to 50% deformation were less prone to secondary graphitization, it being significant that no pores were observed in these specimens. In the final series of tests, the effect of non-uniform deformation on graphitization of steel was studied. The results confirmed the earlier findings in that the degree of graphitization in the region of low deformation was lower than that in heavily deformed parts of cast specimens that had been plastically deformed at low temperatures and then annealed at 680 °C. In the case of preliminarily graphitized specimens, a reverse effect was obtained in that the intensity of graphitization decreased with increasing degree of deformation. Thus, it was shown that heterogeneity of "black fracture" is associated not with the mechanism of fracture, as has been postulated by various investigators, but with non-uniform graphitization which is caused neither by the conditions of heating nor by liquation or non-uniform distribution of graphite particles in the deformed metal.

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S/129/61/000/001/005/013
E193/E183

The Effect of Plastic Deformation on Graphitization of Steel

There are 4 figures and 3 Soviet references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

Card 5/5

BARANOV, A.A. [Baranov, O.O.]; PRITOMANOVA, M.I. [Prytomanova, M.I.]

Volume and structural changes in the regraphitization of steel. Dop.AN URSR no.4:490-494 '61. (MIRA 14:6)

1. Dnepropetrovskiy metallurgicheskiy institut. Predstavleno akademikom AN USSR K. F. Starodubovym.
(Steel)
(Graphite)

BARANOV, A.A. (Dnepropetrovsk); PRITOMANOVA, M.I. (Dnepropetrovsk)

Effect of certain factors on the growth of graphitized steel. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.6:102-106 N-D '61. (MIRA 14:12)

(Steel--Heat treatment)
(Crystals--Growth)

BARANOV, A.A. [Baranov, O.O.]; PRITOMANOVA, M.I. [Prytomanova, M.I.]

Graphitization of porous steel. Dop. AN URSR no.10:1299-1302 '61. (MIRA 14:11)

1. Dnepropetrovskiy metallurgicheskiy institut. Predstavleno akademikom AN USSR K.F.Starodubovym.
(Steel—Metallurgy)

BARANOV, A., kapitan 2-go ranga

Operations of auxiliary vessels in supplying ships. Tyl i snab. Sov. Voor. sil 21 no.9:43-46 S '61. (MIRA 14:12)
(Russia--Navy--Supplies and stores)

BARANOV, A.A.; VOYTSELENOK, S.L.

Exposure of the porosity of graphitized iron alloys. Zav.lab. 28 no.11:1341-1342 '62. (MIRA 15:11)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Iron alloys) (Graphite) (Porosity)

S/148/63/000/001/009/019
E193/E383

AUTHORS: Bel'chenko, G.I. and Baranov, A.A.

TITLE: The effect of some elements on the tendency of steel to stick during hot deformation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no. 1, 1963, 97 - 105

TEXT: The object of the present investigation was to study the effect of Mn (0.8 - 1.86%), Cr (0.19-17.5%), B (0.003-0.03%), Ti (0.063-0.91%), P (0.043-0.1%), Ni (27.6%) and Si (1.17-2.4%) on the tendency of steel to form pressure welds during hot-forming operations. The carbon content of the steels tested varied from 0.03-0.15%. The experiments were conducted on sandwiches made of thin (0.15-0.30 mm) polished strip specimens of each steel (four 50 x 12 mm strips alternating with four 38 x 12 mm specimens) held together by a high-chromium steel sleeve. The test pieces were heated to various test temperatures, compressed to various degrees of reduction in a specially designed apparatus and cooled in air. The strength of bond (if any) formed under these conditions was determined qualitatively by pulling apart the strips comprising

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a test piece. If the separation occurred at the contact interface, the bond was considered to be a result of sticking; when attempts to separate these strips resulted in a fracture away from the contact interface, it was considered that a welded bond had been formed. Apart from correlating the degree and temperature of deformation with the type and strength of the resultant bond, metallographic examination of the sandwiches and microhardness measurements were carried out. Alloys with low (0.48%) and high (1.86%) Mn contents had a low tendency to sticking and no welding occurred between strips of these materials even after high (40%) deformation at 950 °C. Sticking with the formation of relatively strong bonds occurred in the case of alloys containing 1.02 and 1.14% Mn, welded bonds being formed in this alloy in test pieces deformed to 20-30% reduction at 900-950 °C. Alloys with a low Cr content showed a tendency to form welds when deformed to about 30% reduction at 900-950 °C; no welding was observed in this material with a high (1%) Cr content, even when reduction of 30% was given to the test pieces. A strong tendency to sticking was observed in alloys containing boron; in some cases, the formation

of welds occurred after 19% deformation at 950 °C. The phosphor-bearing alloys also showed a strong tendency to sticking, the formation of welds being observed at all the test temperatures (800 - 950 °C) after reductions ranging from 19 - 38%. In the case of Ti-bearing alloys, stocking and welding occurred at high temperatures (900 - 1 000 °C) and after heacy (30-40%) reductions. No welding occurred in high (1-2.5%) Si-containing alloys, the same applying to alloys containing large additions of Ni and Cr. In general, it can be concluded that the ability of the alloying elements studied to inhibit sticking during hot deformation decreases in the following order: Si, Ti, Mn (2%), P, B, Mn (1%). The fact that the heat of formation of oxides of these elements decreases roughly in the same order indicates that absence of welding and sticking is associated with the formation of tenacious films of stable oxides with low solubility in iron. There are 5 figures and 2 tables.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: January 24, 1961

BARANOV, A.A. (Dnepropetrovsk)

Formation of porosites during the austenitizing and graphitizing of iron alloys. Izv. AN SSSR.Otd.tekh.nauk. Met. i topl. no.5:96-101 S-O '62. (MIRA 15:10)
(Iron alloys—Metallurgy) (Porosity)

BARANOV, A.A.; GRECHNYY, Ya.V.; Prinimali uchastiye: MOVCHAN, V., student; NEBORAK, P., student; PIROGOV, V., student

Coalescence of graphite. Lit. proizv. no.5:25-28 My '62. (MIRA 16:3)
(Cast iron--Metallurgy)

RUDOY, B.Z., prof.; TIKHOMIROVA, V.N.; AFONOVA, V.N.; ROTSEL', A.I.; BARANOV, A.A.

[Manual for laboratory work in inorganic and analytical chemistry] Rukovodstvo k prakticheskim zaniatiiam po kursu neorganicheskoi i analiticheskoi khimii. Riazan', Riazanskii med. in-t im. akad.I.P.Pavlova, 1963. 158 p. (MIRA 16:12)

(Chemistry, Inorganic—Laboratory manual)
(Chemistry, Analytical—Laboratory manual)

S/148/63/000/003/005/007
E193/E183

AUTHOR: Baranov, A.A.

TITLE: Plastic deformation of pearlite

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.3, 1963, 98-104

TEXT: Lack of agreement on the nature of changes accompanying plastic deformation of pearlite prompted the present author to study the problem by metallographic analysis of a silicon steel (0.94% C, 0.99% Si, 0.56% Mn, 0.014% P, and 0.029% S) after plastic deformation and subsequent annealing at 680 °C. The experimental test pieces were deformed on hydraulic presses and drop forging machines. One of the side faces of each deformed specimen was polished, etched, and photographed; the etched layer was then removed and the specimen was given additional 3 - 5% reduction, polished, etched, and re-examined. After high initial reductions (of up to 10%) the slip bands (both parallel and normal to the pearlite lamellae) were concentrated mainly in ferrite. On increasing the degree of deformation, kinks appeared in the form of transverse bands rotated through a certain angle relative to the

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Plastic deformation of pearlite

S/148/63/000/003/005/007
E193/E183

initial platelets. In specimens reduced by 30 - 50%, evidence of coarse deformation was observed. In specimens whose side faces were polished and etched before deformation, cracks and evidence of shear of the ferrite and cementite platelets were found. The evidence of shear was also found in the interior of the test pieces. In many cases the evidence of deformation (kinks or slip bands) intersected several pearlite grains. Kinks could be either parallel to each other, or intersect at various angles (most often at 120 °C). In heavily deformed test pieces regions of localized deformation with the cementite platelets broken into a large number of small particles were observed. Polygonization and recrystallization of ferrite took place after holding deformed test pieces for 5 - 10 min at 680 °C, with the ferrite grain boundaries coinciding with the bends in deformed platelets. On further heating, changes took place in the cementite, formation of new growth, fragmentation of cementite platelets, and disappearance of cementite in regions coinciding with the bends in deformed platelets. In bends of large radius, growth of spherical cementite particles was observed. Subsequent structural changes were confined mainly

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Plastic deformation of pearlite

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to kinks in which spherodization and coalescence of cementite took place, followed in the later stages by precipitation of graphite. Substantial changes were observed at the bottom of the kinks; the cementite platelets broke up and assumed more or less spherical shape. In some regions this process did not progress beyond the break-up stage; in others spherodization was complete and coalescence of the individual particles was observed. Graphite precipitates in the form of flat inclusions were observed after 3 hours' annealing; they appeared mainly in the kinks, and in the regions where shear had occurred. Deformation at 100 - 700 °C was accompanied by structural changes similar to those observed in specimens deformed at room temperature. Break-up and spherodization of cementite along the planes of slip and shear were observed in specimens deformed at 500 - 700 °C. The results obtained are discussed in terms of the dislocation theory. The etching characteristics of the deformed and undeformed elements in a deformed specimen, the character of structural changes during annealing, and chemical analysis of carbides separated by anodic dissolution, all indicate that deformation of pearlite is not accompanied by any phase, or concentration, changes in cementite.

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Plastic deformation of pearlite

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At the same time, there is no basis for rejecting the view that localized redistribution of carbon cannot occur in elastically deformed cementite component of a pearlitic steel.
There are 5 figures.

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1. Dnepropetrovskiy metallurgicheskiy institut i Ukrainskiy naucnno-issledovatel'skiy trubnyy institut.
(Steel--Heat treatment)